#15

1 of 3

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: J.Belissent et al.

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Filed: 7 March 2000

Group: 2154

Title: METHODS AND APPARATUS FOR AUTOMATICALLY GENERATING A ROUTING TABLE IN A MESSAGING SERVER

CERTIFICATE OF MAILING

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APPEAL BRIEF TRANSMITTAL
(37 CFR 192)

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Sir:

This brief is in furtherance of the Notice of Appeal filed in this case on February 5, 2002. This brief is transmitted in triplicate.

This application is on behalf of

☐ Small Entity ☒ Large Entity

Pursuant to 37 CFR 1.17(f), the fee for filing the Appeal Brief is:

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fee on part page.

☐ Applicant(s) hereby petition for a _____ extension(s) of time to under 37 CFR 1.136.

If an additional extension of time is required, please consider this a petition therefor.

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☒ Applicant(s) believe that no (additional) Extension of Time is required; however, if it is determined that such an extension is required, Applicant(s) hereby petition that such an extension be granted and authorize the Commissioner to charge the required fees for an Extension of Time under 37 CFR 1.136 to Deposit Account No. 500388.

Total Fee Due:

Appeal Brief fee	$320.00
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☒ Enclosed is Check No. 14563 in the amount of $320.00.

☒ Charge any additional fees or credit any overpayment to Deposit Account No. 500388, (Order No. SUN1P601). Two copies of this transmittal are enclosed.

Respectfully submitted,
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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE BOARD OF APPEALS

EX PARTE JACQUES BELISSENT et al.

Application for Patent

Filed March 7, 2000

Application No. : 09/519,964

FOR:

METHODS AND APPARATUS FOR AUTOMATICALLY GENERATING A ROUTING TABLE IN A MESSAGING SERVER

APPEAL BRIEF

CERTIFICATE OF MAILING

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Signed: _____

Laura M. Dean

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I. REAL PARTY IN INTEREST

The real party in interest is Sun Microsystems, Inc., the assignee of the present application.

II. RELATED APPEALS AND INTERFERENCES

The undersigned is not aware of any related appeals and/or interferences.

III. STATUS OF THE CLAIMS

There are a total of 19 claims pending in this application (claims 1 - 19). Claims 1-19 were submitted with the application as filed. Claims 1- 19 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,920,697 issued to Masters et. a. (hereinafter *Masters*) in view of U.S. Patent No. 6,154,738 issued to Call (hereinafter *Call*). All rejections of pending claims 1 -19 are hereby appealed.

IV. STATUS OF AMENDMENTS

The applicants filed an amendment on December 10, 2001 in response to the final rejection by the Examiner dated September 10, 2001. In the Advisory Action dated January 23, 2002, the Examiner stated that the Applicant's response to the final rejection had been considered but was not deemed to place the application in condition for allowance.

V. SUMMARY OF INVENTIONS

All the claims on appeal relate to methods and apparatus for automatically generating a routing table in a messaging server. The invention describes an Internet standards-based messaging system having a mail server capable of automatically updating routing tables based upon directory entries, that in some embodiments includes DNS table entries as well as MX records, to represent each domain served by all or part of the messaging server community. In particular, in one implementation, domain entries are used to build and maintain routing tables that tell messaging servers how messages should be transferred from server to server until they reach their final delivery point. In one embodiment, routing tables are generated from an LDAP directory structure. However, it should be noted that the generation of routing tables is not limited to the LDAP directory structure since the invention can be applied equally to the

automatic generation of routing tables from DNS domain tables. In this way, the inventive messaging server is capable of using the MX (mail exchange) records within the DNS domain tables to automatically generate the corresponding routing tables.

Referring Fig. 3 of the application, the delivery and routing of messages by a transfer unit 302 is based on a routing table 310 that in turn is derived from the user and group (distribution list) entries stored in a directory service unit 312. The directory service unit 312 is the central repository for meta-information: user profiles, distribution lists, and other system resources based upon, in some embodiments, a dedicated Lightweight Directory Access Protocol (LDAP) directory service. This directory supports the storage of information according to a directory information tree (DIT) which is a hierarchical structure that resembles a tree with one major branch at the top and many branches and sub-branches below. The arrangement of the tree is flexible, allowing administrators to decided how to best deploy the service for their organization. For some, it may be best to arrange the tree according the actual business organizational structure or geographic structure. For others, however, a one-to-one mapping to DNS layers may be best.

The DIT also provides the flexibility to support a wide range of administration scenarios, and can be administered in either a centralized or distributed manner. Centralized administration can be implemented where one authority manages the entire DIT. This type of administration is usually used in scenarios where the entire DIT resides on one mail server.

In order to properly route a message, the transfer unit 302 must access the directory information associated with each message that it processes. However, in a some embodiments, rather than querying the directory service 312 directly each time it processes a message, the transfer unit 302 caches the directory information in a directory cache 314. When the transfer unit processes a particular message, it accesses the appropriate directory information in the cache 314. When required, the transfer unit 302 uses the directory information in the cache 314 to update the routing table 312.

Referring now to Fig. 5 showing a flowchart that details a process 500 that describes a message data flow in accordance with an embodiment of the invention. The process 500 starts at 502 by the user submitting a message to be delivered to another user on the network via the SMTP protocol. At 504, the transfer unit reads the address and the routing information from the directory service server using the address domain information from the incoming message as a key. Using the address domain information from the incoming message, the transfer unit determines delivery information from the address and domain rewriting rules by consulting the

directory cache at 506. Next at 508, based upon the routing information, the transfer unit sends the message to the receiving end where, if necessary, a receiving transfer unit reads the address and looks up the host and mailbox information in the directory services server for the receiving client. If the message address is within the server's domain, the receiving transfer unit delivers the message to the message store. If, however, the message is addressed to another domain, the receiving transfer unit relays the message to another transport agent on the Internet or Intranet. Finally at 510, the user can now retrieve the message or delete it.

In those instances where either a new domain has been created or an existing domain has been updated, a new mail domain must be defined in the mail server based upon a process 600 detailed by the flowchart shown in Fig. 6. The process 600 begins at 602 by the mail server receiving the new domain name. Next, at 604, a corresponding entry is made in the directory information tree (DIT) for every component in the new domain name that does not already exist. At 606, a corresponding DNS record is either updated or created in order to identify the host server as the mail server for the new domain.

In a particular embodiment, the directory information stored in the directory service is continuously updated. As a result, the directory information in the directory cache must be updated periodically with the current directory information in the directory service in a procedure referred to as synchronization. In the described embodiment, there are at least two types of synchronization, namely full synchronization and incremental synchronization.

With full synchronization, the existing cache is replaced with a new cache, completely rebuilt with the current user and group entries from the directory service. After the synchronization occurs, the transfer unit's configuration file is rebuilt then the transfer unit is automatically restarted. With incremental synchronization, the existing cache is updated with user and group entries that were created or modified since the last full or incremental synchronization. With incremental synchronization, the transfer unit is not restarted.

VI. ISSUES

The issues which applicant believes to be most pertinent to the present appeal include:

(a) Whether *Masters* in view of *Call* renders any of claims 1 - 9 unpatentable by teaching or suggesting a method of identifying, in a directory server, a new mail domain

associated with an incoming message that is received by a messaging server by creating a corresponding entry in a directory in the directory server for every component included in the new domain name that does not already exist in the directory and, thereafter, automatically updating a corresponding real domain name service record in a domain name server associated with the directory server based upon the entry.

(b) Whether *Masters* in view of *Call* renders any of claims 10 - 13 unpatentable by teaching or suggesting an electronic messaging system that includes a directory server that identifies for the messaging server a location of a receiving subscriber based upon the receiving subscriber user name and the receiving subscriber domain name, wherein when the receiving subscriber domain is a new domain, the directory server creates a corresponding entry in a directory in the directory server for every component included in the new domain name that does not already exist in the directory, and wherein the directory server then automatically updates a corresponding real domain name record that is used by the directory server to identify the new domain.

(c) Whether *Masters* in view of *Call* renders any of claims 14 -19 unpatentable by teaching or suggesting a computer readable medium containing programming instructions for identifying, in a directory server, a new mail domain associated with an incoming message that is received by a messaging server by creating a corresponding entry in a directory in the directory server for every component included in the new domain name that does not already exist in the directory and, thereafter, automatically updating a corresponding real domain name service record in a domain name server associated with the directory server based upon the entry.

VII. GROUPING OF CLAIMS

With regards to issues (a) – (c), the rejected claims do not stand or fall together, and each of the claims will be argued independently.

VIII. ARGUMENTS

A. Method of Identifying a New Domain Name (Claims 1 - 9)

1. Independent Claim 1

Claim 1 stands rejected as being unpatentable under 35 U.S.C. § 103(a) over *Masters* in view of *Call*. *Masters* teaches at column 2, lines 50 - 55, "...a technology for the automatic discovery and use of routing information and the calculation of all possible message routes with that environment based upon the discovered knowledge..." and at column 3, lines 30 - 35, "...[T]the repository includes an identity of at least one destination site, a plurality of routes for reaching the destination site, and a total cost associated with each of the respective plurality of routes...". Therefore, *Masters* is limited to updating a routing table after ascertaining all possible message routes and determining a total cost of each of a plurality of routes based upon at least one destination site for an email message having components ***already known*** to an associated directory service.

Accordingly, *Masters* only discusses the assimilation and updating of information contained in the routing tables. In *Masters*, the assimilation process only describes incorporating new or modified routing information. *Masters* never describes or even suggests the need to modify the domain service record in response to such changed routing table information. In short, *Masters* is only concerned with one lower level aspect of message transmittal, not the maintenance of an efficient email server system for a large number of users. *Masters* does not teach or suggest a method or apparatus for adding new domains and their associated domain service record as taught by the present invention.

Even if *Call* discloses the use of a domain name in association with an incoming message, the *Call* reference adds nothing to *Masters* with respect to adding new domains and associated domain service records. *Call* does not even mention the problem, let alone propose any solution to it.

Masters and *Call* therefore neither alone anticipate nor in combination make obvious the present invention. *Masters* only addresses a partial subset of the problem solved by the present invention.

In contrast to *Masters*, at page 6 lines 3 - 5 of the specification, a method for " ... identifying, in a directory server, a new mail domain associated with an incoming email message that is received by a messaging server ...". More specifically, claim 1 requires,

> receiving a new domain name associated with the incoming message at the messaging server;
>
> creating a corresponding entry in a directory in the directory server for every component included in the new domain name that does not already exist in the directory;
>
> **automatically updating a corresponding real domain service record in a domain name server associated with the directory server based upon the entry**; and
>
> identifying the new mail domain by the directory server based upon the automatically updated real domain record (emphasis added).

Therefore, in contrast to either of the cited references, the invention as recited in claim 1 is directed at creating an entry in a directory for every component (not already in the directory) included in a ***new domain name*** associated with an incoming email message. In this way, a corresponding real domain service record in a domain name server associated with the directory server is ***automatically updated*** based upon the created entry for any incoming email message.

In conclusion, merely updating the routing tables (which is all that this combination of references discusses) does not offer any teaching on how to automatically update domain server records to incorporate new domain names. Since independent claim 1 addresses automatically updating these domain server records to incorporate new domain names, the applicants believe that claim 1 is distinguishable and allowable over the cited references.

In view of the foregoing, it is respectfully submitted that the rejections of claim 1 be withdrawn for at least the reasons set forth above.

2. Dependent Claim 2

Claim 2 depends directly from independent claim 1 and is therefore submitted to be patentable over the art of record for at least the reasons set forth above with respect to claim 1. Further, claim 2 requires additional elements that when considered in the context of the claimed invention further distinguish the claimed invention from the cited art. More particularly, claim 2 recites:

"automatically generating a routing table based upon the created entry"

Therefore, for at least the reasons above, it is respectfully submitted that *Masters* in view of *Call* neither discloses nor reasonably suggests the invention as currently recited in claim 2. Accordingly, it is respectfully submitted that claim 2 is patentable over the cited art for at least the reasons stated above with regards to independent claim 1.

3. Dependent Claim 3

Claim 3 depends directly from claim 2 and indirectly from independent claim 1 and is therefore submitted to be patentable over the art of record for at least the reasons set forth above with respect to claims 1 and 2. Further, claim 3 requires additional elements that when considered in the context of the claimed invention further distinguish the claimed invention from the cited art. More particularly, claim 3 recites:

> "wherein the identifying is also based upon the automatically generated routing table"

Therefore, for at least the reasons above, it is respectfully submitted that *Masters* in view of *Call* neither discloses nor reasonably suggests the invention as currently recited in claim 3. Accordingly, it is respectfully submitted that claim 3 is patentable over the cited art for at least the reasons stated above with regards to dependent claim 2 and independent claim 1.

4. Dependent Claim 6

Claim 6 depends indirectly from independent claim 1 and is therefore submitted to be patentable over the art of record for at least the reasons set forth above with respect to claim 1. Further, claim 6 requires additional elements that when considered in the context of the claimed invention further distinguish the claimed invention from the cited art. More particularly, claim 6 recites:

> "wherein the local directory is periodically updated (synchronized) whenever the directory server has been updated"

Therefore, for at least the reasons above, it is respectfully submitted that *Masters* in view of *Call* neither discloses nor reasonably suggests the invention as currently recited in claim 6. Accordingly, it is respectfully submitted that claim 6 is patentable over the cited art for at least the reasons stated above with regards to independent claim 1.

B. Electronic Messaging System (Claims 10 - 13)

1. Independent Claim 10

Independent claim 10 stands rejected as being unpatentable under 35 U.S.C. § 103(a) over *Masters* in view of *Call*. *Masters* teaches at column 2, lines 50 - 55, "...a technology for the automatic discovery and use of routing information and the calculation of all possible message routes with that environment based upon the discovered knowledge..." and at column 3, lines 30 - 35, "...[T]the repository includes an identity of at least one destination site, a plurality of routes for reaching the destination site, and a total cost associated with each of the respective plurality of routes...". Therefore, *Masters* is limited to updating a routing table after ascertaining all possible message routes and determining a total cost of each of a plurality of routes based upon at least one destination site for an email message having components ***already known*** to an associated directory service.

Accordingly, *Masters* only discusses the assimilation and updating of information contained in the routing tables. In *Masters*, the assimilation process only describes incorporating new or modified routing information. *Masters* never describes or even suggests the need to modify the domain service record in response to such changed routing table information. In short, *Masters* is only concerned with one lower level aspect of message transmittal, not the maintenance of an efficient email server system for a large number of users. *Masters* does not teach or suggest a method or apparatus for adding new domains and their associated domain service record as taught by the present invention.

Even if *Call* discloses the use of a domain name in association with an incoming message, the *Call* reference adds nothing to *Masters* with respect to adding new domains and associated domain service records. *Call* does not even mention the problem, let alone propose any solution to it.

Masters and *Call* therefore neither alone anticipate nor in combination make obvious the present invention. *Masters* only addresses a partial subset of the problem solved by the present invention.

In contrast, independent claim 10 describes an electronic messaging system arranged to transfer an incoming email message between a sending subscriber and a receiving subscribe that includes,

> a directory server coupled to the main host computer that identifies for the messaging server a location of the receiving subscriber based upon the receiving subscriber user name and the receiving subscriber domain name, wherein when the receiving subscriber domain name is a new domain, the directory server creates a corresponding entry in a directory in the directory server for every component included in the new domain name that does not already exist in the directory, and wherein the directory server then automatically updates a corresponding real domain name record that is, in turn, used by the directory server to identify the new domain.

Therefore, in contrast to either of the cited references, the invention as recited in claim 1 is directed at creating an entry in a directory for every component (not already in the directory) included in a ***new domain name*** associated with an incoming email message. In this way, a corresponding real domain service record in a domain name server associated with the directory server is ***automatically updated*** based upon the created entry for any incoming email message.

In conclusion, merely updating the routing tables (which is all that this combination of references discusses) does not offer any teaching on how to automatically update domain server records to incorporate new domain names. Since independent claim 1 addresses automatically updating these domain server records to incorporate new domain names, the applicants believe that claim 10 is distinguishable and allowable over the cited references.

In view of the foregoing, it is respectfully submitted that the rejections of claim 10 be withdrawn for at least the reasons set forth above.

2. Dependent Claim 11

Claim 11depends directly from independent claim 10 and is therefore submitted to be patentable over the art of record for at least the reasons set forth above with respect to claim 1. Further, claim 11 requires additional elements that when considered in the context of the claimed invention further distinguish the claimed invention from the cited art. More particularly, claim 11 recites:

> "automatically generates a routing table based upon the created entry"

Therefore, for at least the reasons above, it is respectfully submitted that *Masters* in view of *Call* neither discloses nor reasonably suggests the invention as currently recited in claim 11. Accordingly, it is respectfully submitted that claim 11 is patentable over the cited art for at least the reasons stated above with regards to independent claim 10.

3. Dependent Claim 12

Claim 12 depends directly from claim 11 and indirectly from independent claim 10 and is therefore submitted to be patentable over the art of record for at least the reasons set forth above with respect to claims 10 and 11. Further, claim 12 requires additional elements that when considered in the context of the claimed invention further distinguish the claimed invention from the cited art. More particularly, claim 12 recites:

> "wherein the DNS record is updated based upon a mail exchange (MX) record associated with the incoming message."

Therefore, for at least the reasons above, it is respectfully submitted that *Masters* in view of *Call* neither discloses nor reasonably suggests the invention as currently recited in claim 12. Accordingly, it is respectfully submitted that claim 12 is patentable over the cited art for at least the reasons stated above with regards to dependent claim 11 and independent claim 10.

C. Computer Readable Medium (Claims 14 - 19)

1. Independent claim 14

Independent claim 14 stands rejected as being unpatentable under 35 U.S.C. § 103(a) over *Masters* in view of *Call*. *Masters* teaches at column 2, lines 50 - 55, "...a technology for the automatic discovery and use of routing information and the calculation of all possible message routes with that environment based upon the discovered knowledge..." and at column 3, lines 30 - 35, "...[T]the repository includes an identity of at least one destination site, a plurality of routes for reaching the destination site, and a total cost associated with each of the respective plurality of routes...". Therefore, *Masters* is limited to updating a routing table after ascertaining all possible message routes and determining a total cost of each of a plurality of routes based upon at least one destination site for an email message having components ***already known*** to an associated directory service.

Accordingly, *Masters* only discusses the assimilation and updating of information contained in the routing tables. In *Masters*, the assimilation process only describes incorporating new or modified routing information. *Masters* never describes or even suggests the need to modify the domain service record in response to such changed routing table information. In short, *Masters* is only concerned with one lower level aspect of message transmittal, not the maintenance of an efficient email server system for a large number of users. *Masters* does not teach or suggest a method or apparatus for adding new domains and their associated domain service record as taught by the present invention.

Even if *Call* discloses the use of a domain name in association with an incoming message, the *Call* reference adds nothing to *Masters* with respect to adding new domains and associated domain service records. *Call* does not even mention the problem, let alone propose any solution to it.

Masters and *Call* therefore neither alone anticipate nor in combination make obvious the present invention. *Masters* only addresses a partial subset of the problem solved by the present invention.

In contrast, independent claim 14 describes computer readable medium containing programming instructions for identifying, in a directory server, a new domain associated with an incoming message configured to cause a computer to execute the operations,

> creating a corresponding entry in a directory in the directory server for every component included in the new domain name that does not already exist in the directory;
>
> automatically updating a corresponding real domain server record in a domain name server associated with the directory server based upon the entry; and
>
> identifying the new mail domain by the directory server based upon the automatically updated real domain record.

Therefore, in contrast to either of the cited references, the invention as recited in claim 14 is directed at creating an entry in a directory for every component (not already in the directory) included in a ***new domain name*** associated with an incoming email message. In this way, a

corresponding real domain service record in a domain name server associated with the directory server is ***automatically updated*** based upon the created entry for any incoming email message.

In conclusion, merely updating the routing tables (which is all that this combination of references discusses) does not offer any teaching on how to automatically update domain server records to incorporate new domain names. Since independent claim 14 addresses automatically updating these domain server records to incorporate new domain names, the applicants believe that claim 14 is distinguishable and allowable over the cited references.

In view of the foregoing, it is respectfully submitted that the rejections of claim 14 be withdrawn for at least the reasons set forth above.

2. Dependent Claim 15

Claim 15 depends directly from independent claim 14 and is therefore submitted to be patentable over the art of record for at least the reasons set forth above with respect to claim 14. Further, claim 15 requires additional elements that when considered in the context of the claimed invention further distinguish the claimed invention from the cited art. More particularly, claim 14 recites:

> "automatically generating a routing table based upon the created entry"

Therefore, for at least the reasons above, it is respectfully submitted that *Masters* in view of *Call* neither discloses nor reasonably suggests the invention as currently recited in claim 15. Accordingly, it is respectfully submitted that claim 15 is patentable over the cited art for at least the reasons stated above with regards to independent claim 14.

3. Dependent Claim 16

Claim 16 depends directly from claim 15 and indirectly from independent claim 14 and is therefore submitted to be patentable over the art of record for at least the reasons set forth above with respect to claims 14 and 15. Further, claim 16 requires additional elements that when considered in the context of the claimed invention further distinguish the claimed invention from the cited art. More particularly, claim 16 recites:

> "the operation of the identifying is also based upon the automatically generated routing table"

Therefore, for at least the reasons above, it is respectfully submitted that *Masters* in view of *Call* neither discloses nor reasonably suggests the invention as currently recited in claim 16.

Accordingly, it is respectfully submitted that claim 16 is patentable over the cited art for at least the reasons stated above with regards to dependent claim 15 and independent claim 14.

4. Dependent Claim 19

Claim 19 depends indirectly from independent claim 14 and is therefore submitted to be patentable over the art of record for at least the reasons set forth above with respect to claim 14. Further, claim 19 requires additional elements that when considered in the context of the claimed invention further distinguish the claimed invention from the cited art. More particularly, claim 19 recites:

> "cause the computer to execute the operation of periodically updating (synchronizing) the local directory cache whenever the directory server has been updated"

Therefore, for at least the reasons above, it is respectfully submitted that *Masters* in view of *Call* neither discloses nor reasonably suggests the invention as currently recited in claim 19. Accordingly, it is respectfully submitted that claim 19 is patentable over the cited art for at least the reasons stated above with regards to independent claim 14.

IX. Conclusion

In view of the foregoing, it is respectfully submitted that none of the pending claims are rendered obvious by *Masters* or *Call* any reasonable combination of *Masters* and *Call*. Accordingly, the pending rejections of all of the claims under 35 U.S.C 103(a) should be reversed.

Respectfully Submitted,

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X. APPENDIX

CLAIMS ON APPEAL

1. A method of identifying, in a directory server, a new mail domain associated with an incoming message that is received by a messaging server, comprising:

receiving a new domain name associated with the incoming message at the messaging server;

creating a corresponding entry in a directory in the directory server for every component included in the new domain name that does not already exist in the directory;

automatically updating a corresponding real domain service record in a domain name server associated with the directory server based upon the entry; and

identifying the new mail domain by the directory server based upon the automatically updated real domain record.

2. A method as recited in claim 1, further comprising:

automatically generating a routing table based upon the created entry.

3. A method as recited in claim 2, wherein the identifying is also based upon the automatically generated routing table.

4. A method as recited in claim 3, wherein the messaging server includes a transfer unit that uses the automatically generated routing table to open a channel by which the incoming message is delivered.

5. A method as recited in claim 4, wherein the transfer unit includes a local directory cache used to store most recently used directory entries thereby reducing traffic between the messaging server and the directory server.

6. A method as recited in claim 5, wherein the local directory cache is periodically updated (synchronized) whenever the directory server has been updated.

7. A method as recited in claim 6, wherein the directory is a hierarchically organized directory.

8. A method as recited in claim 7, wherein the hierarchically organized directory is an LDAP based directory information tree (DIT).

9. A method as recited in claim 1, wherein the creating is based upon a mail exchange record (MX) associated with the incoming email message.

10. An electronic messaging system having a main host computer for transferring an incoming email message between a sending subscriber and a receiving subscriber wherein the receiving subscriber is identified by a receiving subscriber user name and corresponding receiving subscriber domain name, comprising:

a messaging server coupled to the main host computer suitably arranged to receive the incoming message from the sending subscriber and forward the incoming message to the receiving subscriber; and

a directory server coupled to the main host computer that identifies for the messaging server a location of the receiving subscriber based upon the receiving subscriber user name and the receiving subscriber domain name, wherein when the receiving subscriber domain is a new domain, the directory server creates a corresponding entry in a directory in the directory server for every component included in the new domain name that does not already exist in the directory, and wherein the directory server then automatically updates a corresponding real domain name record that is, in turn, used by the directory server to identify the new domain.

11. An electronic messaging system as recited in claim 10, wherein the messaging server automatically generates a routing table based upon the created entry.

12. An electronic messaging system as recited in claim 11, wherein the DNS record is updated based upon a mail exchange (MX) record associated with the incoming message.

13. An electronic messaging system as recited in claim 12, wherein the messaging server includes a transfer unit that uses the automatically generated routing table to open a channel by which the incoming message is forwarded to the receiving subscriber.

14. A computer-readable medium containing programming instructions for identifying, in a directory server, a new domain associated with an incoming message that is received by a messaging server, the computer-readable medium comprising computer program code devices configured to cause a computer to execute the operations of:

receiving a new domain name corresponding to the new domain by the messaging server;

creating a corresponding entry in a directory in the directory server for every component included in the new domain name that does not already exist in the directory;

automatically updating a corresponding real domain server record in a domain name server associated with the directory server based upon the entry; and

identifying the new mail domain by the directory server based upon the automatically updated real domain record.

15. A computer-readable medium as recited in claim 14 wherein the computer program code devices configured for identifying, in a directory server, a new domain associated with an incoming message that is received by a messaging server further includes computer program code devices configured to cause a computer to execute the operations of:

automatically generating a routing table based upon the created entry.

16. A computer-readable medium as recited in claim 15 wherein the computer program code devices configured for identifying, in a directory server, a new domain associated with an incoming message that is received by a messaging server further includes computer program code devices configured to cause a computer to execute the operation of the identifying is also based upon the automatically generated routing table.

17. A computer-readable medium as recited in claim 16 wherein the computer program code devices configured for identifying, in a directory server, a new domain associated with an incoming message that is received by a messaging server further includes computer program code devices configured to cause a computer to execute the operation of using the

automatically generated routing table to open a channel by which the incoming message is delivered by a transfer unit incorporated into the messaging server.

18. A computer-readable medium as recited in claim 17 wherein the computer program code devices configured for identifying, in a directory server, a new domain associated with an incoming message that is received by a messaging server further includes computer program code devices configured to cause a computer to execute the operation of storing the most recently used directory entries in a local directory cache thereby reducing traffic between the messaging server and the directory server.

19. A computer-readable medium as recited in claim 18 wherein the computer program code devices configured for identifying, in a directory server, a new domain associated with an incoming message that is received by a messaging server further includes computer program code devices configured to cause a computer to execute the operation periodically updating (synchronizing) the local directory cache whenever the directory server has been updated.